IN THE CLAIMS

1. (Withdrawn) A device comprising:

a first particle separating channel and a second particle separating channel, said second particle separating channel transverse to said first particle separating channel and in communication therewith; and

at least two spaced apart first electrodes to maintain a first voltage, one of said first electrodes disposed in either said first particle separating channel or said second particle separating channel.

2. (Withdrawn) The device of claim 1 wherein at least two of said first electrodes are disposed in said first particle separating channel, one of said first electrodes proximate said second particle separating channel.

3. (Withdrawn) The device of claim 1 wherein one of said first electrodes is disposed in said first particle separating channel and a second of said first electrodes is disposed in said second particle separating channel proximate said first particle separating channel.

4. (Withdrawn) The device of claim 1 further including a third particle separating channel transverse to said first particle separating channel and in communication therewith, said third particle separating channel spaced apart from said second particle separating channel.

5. (Withdrawn) The device of claim 4 further including an additional first electrode disposed either in said third particle separating channel proximate said first particle separating channel or in said first particle separating channel proximate said third particle separating channel.

6. (Withdrawn) The device of claim 5 wherein said first electrodes are adapted to enable a voltage gradient to be applied to a solution when the solution is disposed in said first particle separating channel, said voltage gradient to cause charged particles within said solution to migrate in said first particle separating channel.

7. (Withdrawn) The device of claim 1 further including a second electrode disposed in said second particle separating channel to maintain a second voltage, said second voltage to cause charged particles in a solution to migrate in said second particle separating channel.

8. (Withdrawn) The device of claim 7 further including sieving media disposed in said second particle separating channel.

9. (Withdrawn) The device of claim 1 further including at least one reservoir disposed either on an end of said first particle separating channel or on the end of said second particle separating channel distal to said first particle separating channel.

10. (Withdrawn) The device of claim 1 further including a conductivity detector disposed in said second particle separating channel, said conductivity detector including two spaced apart third electrodes.

11. (Original) A method comprising:

forming a first particle separating channel and a second particle separating channel, said second particle separating channel transverse to said first particle separating channel and in communication therewith; and

disposing at least two spaced apart first electrodes in said particle separating channels to maintain a first bias potential in said first particle separating channel, one of said first electrodes disposed in said first particle separating channel.

12. (Original) The method of claim 11 wherein disposing at least two spaced apart first electrodes in said particle separating channels includes disposing another of said first electrodes in said second particle separating channel.

13. (Original) The method of claim 11 further including disposing a second electrode in said second particle separating channel to maintain a second bias potential in said second particle separating channel.

14. (Original) The method of claim 11 further including disposing sieving media in said second particle separating channel.

15. (Original) The method of claim 11 further including coupling a reservoir to an end of either said first particle separating channel or said second particle separating channel.

16. (Original) The method of claim 11 further including disposing a conductivity detector in said second particle separating channel.

17. (Withdrawn) A system comprising:

a first particle separating channel and at least one second particle separating channel, said at least one second particle separating channel transverse to said first particle separating channel;

at least three spaced apart first electrodes to enable a voltage gradient to be applied to a solution when the solution is disposed in said first particle separating channel, at least one of said first electrodes disposed in either said first particle separating channel or said second particle separating channel; and

a pump to move said solution in said first particle separating channel against said voltage gradient.

18. (Withdrawn) The system of claim 17 further including two spaced apart second electrodes disposed in said second particle separating channel to enable an electric field to be applied to a solution disposed in said second particle separating channel.

19. (Withdrawn) The system of claim 17 further including at least one reservoir disposed at an end of either said first particle separating channel or said second particle separating channel such that said reservoir is in communication therewith.

20. (Withdrawn) The system of claim 17 wherein said system is a micro-electro-mechanical system and said first particle separating channel and second particle separating channel are microfluidic channels.

21. (Original) A method comprising:

applying an electric field gradient to a solution containing charged particles under conditions that will cause at least some of the charged particles to focus in a first channel formed in a device; and

without transfer, applying an electric field to the focused charged particles to cause the focused charged particles to migrate through a sieve disposed in at least one second channel in said device, said at least one second channel transverse to said first channel and in communication therewith.

22. (Original) The method of claim 21 wherein applying the electric field gradient to the solution containing charged particles under conditions that will cause at least some of the charged particles to focus in the first channel includes causing at least some of the charged particles to focus at or near said at least one second channel.

23. (Original) The method of claim 22 wherein applying the electric field gradient to the solution containing charged particles under conditions that will cause at least some of the charged particles to focus in said first channel includes establishing a convective force in said solution.

24. (Original) The method of claim 22 wherein applying the electric field gradient to the solution containing charged particles under conditions that will cause at least some of the charged particles to focus in said first channel includes applying a first electric field gradient and a second electric field gradient to a solution containing charged particles under conditions that will cause negatively charged particles to focus in said first channel in said first electric field gradient and positively charged particles to focus in said first channel in said second electric field gradient.

25. (Original) The method of claim 24 wherein applying the first electric field gradient and the second electric field gradient to the solution containing charged particles under conditions that will cause negatively charged particles to focus in said first channel in said first electric field gradient and positively charged particles to focus in said first channel in said second electric field gradient includes causing at least some of the negatively charged particles to focus at or near at least one second channel and at least some of the positively charged particles to focus at or near at least another second channel.

26. (Original) The method of claim 21 further including causing said focused charged particles to be negatively charged.

27. (Original) The method of claim 21 wherein applying an electric field gradient includes applying a linear electric field gradient.

28. (Original) The method of claim 21 further including detecting said charged particles in said at least one second channel.

29. (Original) The method of claim 28 wherein detecting charged particles in said at least one second channel includes detecting a change in conductivity in a region of said at least one second channel.

30. (Original) The method of claim 21 wherein applying the electric field gradient to the solution containing charged particles includes applying an electric field gradient to a solution containing proteins or portions thereof.